Historic, Archive Document

Do not assume content reflects current
scientific knowledge, policies, or practices.

1.96
R31S.11
Cop. 2

LIBRARY
CURRENT SERIAL RECORD
★ FEB 27 1958 ★
U. S. DEPARTMENT OF AGRICULTURE



FEDERAL - STATE - PRIVATE COOPERATIVE

SNOW SURVEY and WATER SUPPLY FORECASTS for ARIZONA

UNITED STATES DEPARTMENT of AGRICULTURE
SOIL CONSERVATION SERVICE

Data included in this report were obtained by the agency named above in cooperation with the Federal, State and private organizations listed on the last page of this report

AS OF
FEB. 15, 1958

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

TO RECIPIENTS OF COOPERATIVE SNOW SURVEY AND WATER SUPPLY FORECAST REPORTS:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Fortunately, most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from fore-knowledge of the runoff.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, about 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1300 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

By relating snow survey measurements taken over a period of years to spring-summer runoff during the same period, relationships have been developed which make it possible to forecast seasonal runoff several months in advance of occurrence. In order to make a forecast, once a forecast relationship has been developed, the maximum snow water content at previously selected key snow courses is usually entered in the forecast relationship. More accurate forecasts are often obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast relationships.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	COOPERATING WITH	LOCATION
RIVER BASINS			
Colorado, Rio Grande and Platte-Arkansas	Monthly (Feb.-May)	Colo. Exp. Station	Ft. Collins, Colo.
Columbia *Includes Alaska*	Monthly (Jan.-May)		Boise, Idaho
Upper Missouri	Monthly (Feb.-May)	Mont. Agr. Exp. Station	Bozeman, Montana
West-Wide	Semi-Annually (Oct. 1 and Apr. 1)	Cooperators	Portland, Oregon
STATES			
Arizona	Semi-Monthly (Jan. 15-Apr. 1)	Salt R. Valley Water Users Association	Phoenix, Arizona
Nevada	Monthly (Feb.-Apr.)	Nevada State Engineer	Reno, Nevada
Oregon	Monthly (Jan.-May)	Ore. Agr. Exp. Station	Portland, Oregon
Utah	Monthly (Jan.-May)	Utah State Engineer Utah Agr. Exp. Station	Salt Lake City, Utah
Washington	Monthly (Feb.-May)	Wash. State Dept. of Conservation and Development	Spokane, Washington
Wyoming	Monthly (Feb.-June)	Wyoming State Engineer	Casper, Wyoming

Copies of the various reports may be secured from: Head, Water Supply Forecasting Section
Soil Conservation Service
209 S.W. 5th Avenue, Portland 4, Oregon

PUBLISHED BY OTHER AGENCIES

OTHER SNOW SURVEY REPORTS			
British Columbia	Monthly (Feb.-June)	Comptroller, Water Rights Br., Dept. of Lands and Forests, Parliament Bldgs.	Victoria, B.C.
California	Monthly (Feb.-May)	California Department of Water Resources	Sacramento, California

FEDERAL-STATE COOPERATIVE SNOW SURVEYS AND WATER SUPPLY FORECASTS

for

A R I Z O N A

(Salt, Verde, Gila and part of Lower Colorado River Basin)

Issued

February 18, 1958

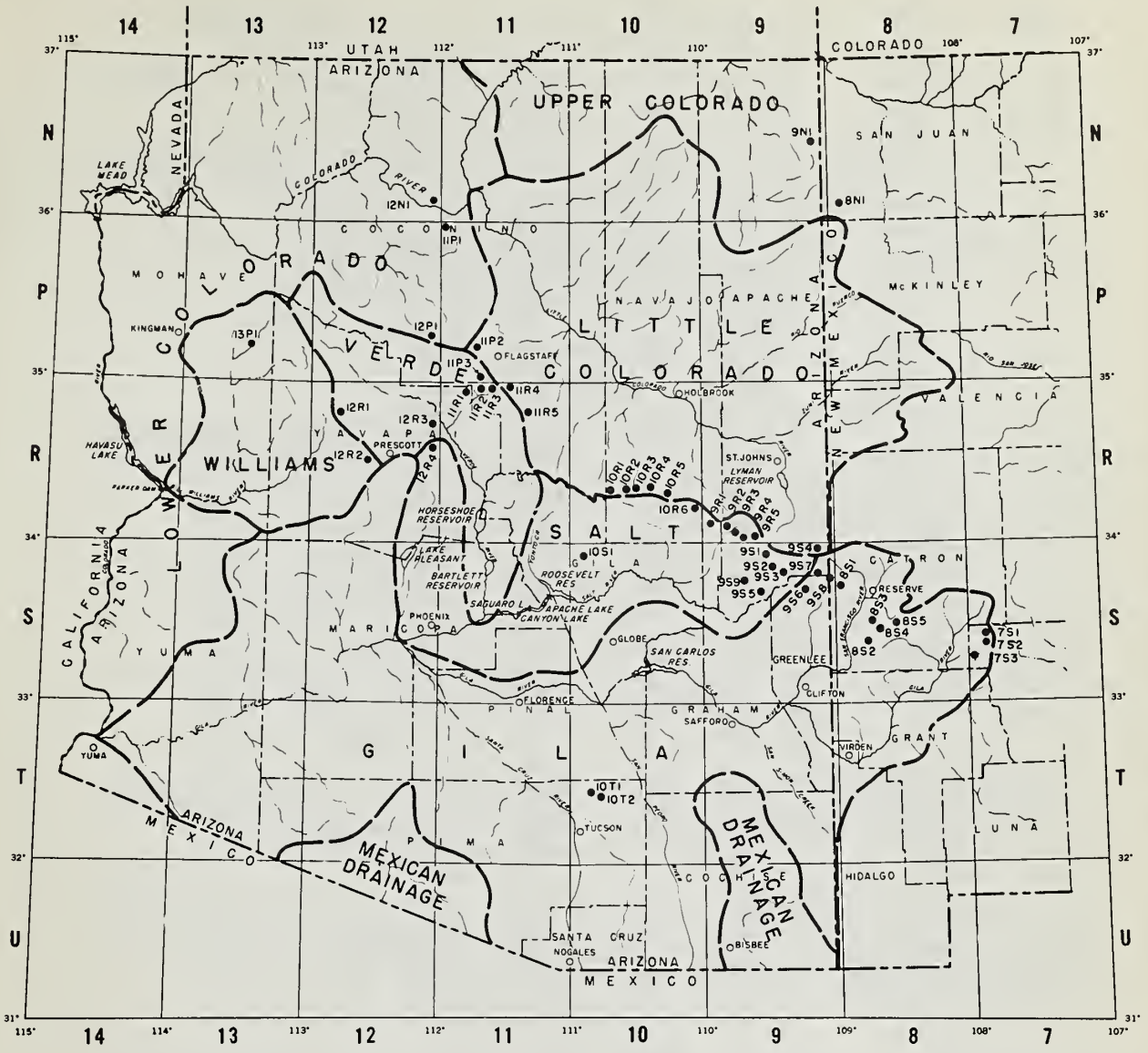
Report Prepared

by

George Watt, Snow Survey Supervisor
Soil Conservation Service
807 West Washington
Phoenix, Arizona

Robert V. Boyle
State Conservationist
Soil Conservation Service

Victor I. Corbell
President
Salt River Valley Water Users' Ass'n.



LEGEND

DRAINAGE BASIN BOUNDARY

13U2 ● SNOW COURSE

ARIZONA
COOPERATIVE SNOW SURVEYS

SNOW COURSES AND DRAINAGE BASINS
JANUARY 1956

0 40 80 120 160 200

SCALE IN MILES

M 178

USDA-SCS PORTLAND OREG 1957

INDEX TO SNOW COURSES

NUMBER*	NAME	SEC	TWP	RGE**	ELEVATION	RIVER BASIN
11-P -3	Antelope Park	29	19N	8E	7300	Verde # ..... Discontinued
9-S -1	Baldy (p)	28	7N	27E	9000	Salt-Little Colorado
10-T -1	Bear Wallow	6	12S	16E	8100	Gila
9-S -6	Beaver Head	13	4N	30E	8000	Salt-Frisco
9-S -3	Big Lake Knoll	2	5N	28E	8800	Salt-Frisco-Little Colorado .. Discontinued
7-S -3	Black Canyon	8	13S	11W***	6790	Gila
12-N-1	Bright Angel	34	33N	3E	8400	Lower Colorado
12-R -1	Camp Wood	3	16N	6W	5700	Williams-Verde
10-R -3	Canyon Creek (s)	18	11N	15E	7500	Salt
11-R -2	Casner Park (s)	19	18N	8E	6950	Verde
12-P -1	Chalender (s)	27	22N	3E	7100	Verde
8-S -3	Corner Mountain	7	10S	17W***	8850	Gila-Frisco
9-S -9	Corn Creek (p)	Lat. 33°45'N. Long. 109°45'W. §			7730	Salt
9-S -7	Coronado Trail	26	5N	30E	8000	Salt-Frisco
10-R -2	Elk	31	11N	14E	7600	Salt-Little Colorado ..... Discontinued
10-R -6	Forest Dale (s)	2	9N	21E	6000	Salt-Little Colorado
11-P -2	Fort Valley	22	22N	6E	7350	Verde #
9-R -5	Ft. Apache	18	7N	27E	9160	Salt-Little Colorado
8-S -1	Frisco Divide	31	6S	20W***	8000	Frisco-Gila
12-R -4	Gaddes Canyon	11	15N	2E	7600	Verde #
10-R -5	Gentry	36	11N	15E	7600	Salt-Little Colorado
11-P -1	Grand Canyon	21	30N	4E	7500	Lower Colorado
11-R -5	Happy Jack	30	17N	9E	7630	Verde
10-R -4	Heber (p)	28	11N	15E	7600	Salt-Little Colorado
7-S -2	Inman	6	11S	10W***	7800	Gila
12-R -2	Iron Springs	22	14N	3W	6200	Williams-Verde
9-S -2	Maverick Fork (s)(p)	13	6N	27E	9050	Salt-Little Colorado
9-R -4	McKay Peak	13	7N	24E	8250	Salt ..... Not read
9-R -2	McNary (s)	14	8N	23E	7200	Salt-Little Colorado
9-R -1	Milk Ranch	28	8N	23E	7000	Salt
12-R -3	Mingus Mountain	3	15N	2E	7100	Verde #
8-S -2	Mogollon	2	11S	19W***	7000	Frisco-Gila
11-R -4	Mormon Lake	13	18N	8E	7350	Verde #
11-R -3	Mormon Mountain(s)	14	18N	8E	7500	Verde
11-R -1	Munds Park (s)	7	18N	7E	6500	Verde
8-S -4	N-Bar Lake	16	10S	17W***	8600	Gila
8-S -5	Negrito	6	10S	16W***	8200	Gila
9-S -4	Nutrioso	23	6N	30E	8500	Salt-Frisco-Little Colorado
9-S -5	Pacheta	§ At town of Maverick, Ariz.			7800	Salt
9-N-1	Roof Butte	15	8N	6W****	8500	Little Colorado # ..... Not read
10-T -2	Rose Canyon	15	12S	16E	7300	Gila
9-S -8	State Line	6	6S	21W***	8000	Gila-Frisco
7-S -1	Taylor Creek	20	10S	10W***	7850	Gila
9-R -3	Trout Creek	5	7N	24E	6400	Salt ..... Not read
8-N-1	Washington Pass	Lat. 36°05'N. Long. 108°50'W. §			8600	Little Colorado # ..... Not read
13-P -1	Willow Ranch	16	21N	11W	5000	Williams
10-R -1	Woods Canyon	15	11N	13E	7640	Salt-Little Colorado ..... Discontinued
10-S -1	Workman Creek	33	6N	14E	6900	Salt

* Number indicates location of course within coordinate rectangle, thus 9-N 1 is Course #1 in coordinate rectangle 9-N.

** All in Gila and Salt River Base and Meridian except where otherwise indicated.

*** New Mexico Principal Meridian.

**** Navajo Base.

On adjacent drainage.

(s) Soil Moisture Station installed on or in vicinity of course.

§ Unsurveyed.

(p) Storage gage installed on or in vicinity of course

M 178 A

ARIZONA WATER SUPPLY OUTLOOK

February 15, 1958

* *
* Below average water supply is forecast *
* for Arizona. Reservoir storage is 62 *
* per cent of average and stream runoff *
* for the February through May period is *
* forecast to be 35 per cent of average. *
* *

SNOW COVER: Early February rains increased the stream runoff, adding to the storage but adding little to the light snow pack. Snow pack increases were found mostly on the Salt River Drainage in the White Mountains above 9,000 feet. Here the snow cover is 85 per cent of average and 90 per cent of last year. The lower snow courses between 7,000 and 8,500 feet and those on the Verde and Gila River Drainages have a relatively much lighter pack, varying from zero to 25 per cent of average. As compared to last year, the snow pack this year is about the same on the Salt and Gila River watersheds and very much lighter on the Tonto and Verde Rivers.

SOIL MOISTURE: The February rains have improved the soil moisture conditions, but some of the moisture stations still showed moisture deficiencies in the upper two feet.

RESERVOIRED WATER: The recent rainfall raised the water storage and improved conditions slightly over the February 1 report. The total storage in the eight major reservoirs in central Arizona, excluding the Colorado River reservoirs, is 62 per cent of average and 17 per cent of capacity.

STREAM FLOW: With average precipitation, stream flow for the February through May period on the Salt, Tonto and Verde Rivers is forecast to be 210,000 acre feet, which is 30 per cent of average and 52 per cent of last year. This would bring the total June 1 surface water supply -- stream flow plus storage -- to 86 per cent of last year and about 50 per cent of average.

The Gila and San Francisco Rivers are forecasted to flow 20,000 and 17,000 acre feet, respectively. This would be 30 per cent more than last year but only 53 per cent of average.

PRECIPITATION: As reported by the U. S. Weather Bureau, the January precipitation was below normal throughout the State. The October through January precipitation is still above average at many stations due to the fall rains in October and November.

STREAM FLOW FORECASTS - FEBRUARY 15, 1958

The following summarized runoff forecasts are based principally on mountain snow cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts.

BASIN, STREAM AND STATION	SEASONAL STREAM FLOW IN THOUSANDS OF ACRE FEET FORECAST PERIOD FEBRUARY - MAY, INCLUSIVE					
	Forecast Runoff 1958	Percent 15-Year Average	Measured Runoff 1957	1956	1955	1938-52 Average
Salt River at Intake	110.0	34	166.8	127.5	46.0	327.1
Tonto River above Roosevelt	15.0	35	36.8	9.0	3.6	42.6 1/
Verde River above Horseshoe	85.0	38	184.6	44.9	56.3	222.0
Gila River at Virden	20.0	33	13.0	10.8	10.7	59.9
Frisco River at Clifton	17.0	33	15.7	10.2	9.0	51.7
Little Colorado River above Lyman Dam 2/	3.0	33	----	2.9	0.8	9.1 1/

1/ Average is for less than 15 years of record in the 1938-52 period.

2/ Forecast period for Little Colorado River above Lyman Dam is for February-June inclusive.

STATUS OF ARIZONA RESERVOIR STORAGE - FEBRUARY 15, 1958

BASIN and/or STREAM	RESERVOIR	USABLE CAPACITY 1000s AF	USABLE STORAGE - 1000 ACRE FEET 1958	1957	1956	15-Year Average 1938-52
		GILA DRAINAGE				
Agua Fria	Lake Pleasant	163.8	12.0	22.3	28.5	21.9 1/
Gila	San Carlos	1,205.0	59.8	9.5	76.8	175.9
Verde	Bartlett	180.0	127.5	114.2	80.0	55.0 1/
Verde	Horseshoe	143.0	4.1	30.7	2.4	14.1 1/
Salt	Roosevelt	1,381.6	45.0	141.3	221.0	420.7
Salt	Apache	245.1	218.5	97.2	242.0	185.5
Salt	Canyon	57.8	51.5	50.8	57.0	34.0
Salt	Saguaro	69.8	60.5	56.2	67.0	23.1
		LOWER COLORADO DRAINAGE				
Colorado	Lake Havasu	688.0	606.4	607.9	603.5	555.6 1/
Colorado	Lake Mohave	1,810.0	1,677.7	1,711.0	1,680.0	1,065.5 1/
Colorado	Lake Mead	27,207.0	19,848.0	11,686.0	11,120.0	19,131.0
Little Colorado	Lyman 2/	30.6	8.2	0.0	8.2	8.1 1/
Little Colorado	Show Low Lake	5.1	0.1	0.5	0.1	---

1/ Average is for less than 15 years of record in the 1938-52 period.

2/ The Snow Survey and Water Supply Forecast Bulletin for February 1, 1958, showed usable storage in Lyman Reservoir on February 1, 1958, as 1.9. This should be corrected to 7.9

SUMMARY OF FEBRUARY 15, 1958 ARIZONA SNOW SURVEYS AND COMPARISON OF DATA WITH THAT OF PREVIOUS YEARS BY WATERSHED

WATERSHED	No. of Courses in Average	Snow Depth 1958 Inches	Snow Water Content in Inches				Snow Density 1958 Percent	1958 Water Content in Percent of	
			1958	1957	1956	Normal		1957	Normal
Gila River	8	2	0.5	0.0	3.0	2.1	25	---	24
Salt River	7	3	0.7	0.0	4.4	2.4	23	---	29
Verde River	4	1	0.2	0.9	0.2	2.2	20	22	9
Williams River	3	0	0.0	0.6	0.0	1.3	---	---	---
Lower Colorado River	2	6	1.4	2.2	1.1	3.6	23	64	39
Little Colorado River	3	3	0.8	0.0	4.1	2.0	27	---	40

ARIZONA SNOW SURVEYS - ABOUT FEBRUARY 15, 1958

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENTS 1958 Date of Survey	Snow Depth (In.)	Water Content (In.)	PAST RECORD Water Content (In.) 1957	1956	1938-52 Average	Prior Yrs. of Record
GILA RIVER								2/	
Nutrioso	9S4	8500	2/13	3	0.6	0.0	3.0	2.5	18
Bear Wallow 3/	10T1	8100	Report Delayed			0.0	3.4	2.3	10
Frisco Divide	8S1	8000	2/13	3	0.6	0.0	3.5	2.0	18
State Line	9S8	8000	2/13	5	1.1	0.0	4.6	2.9	18
Coronado Trail	9S7	8000	2/13	4	0.8	0.0	3.9	3.9	18
Beaver Head	9S6	8000	2/13	T	T	0.0	4.5	3.1	17
Taylor Creek	7S1	7850	2/14	0	0.0	0.0	0.6	0.6	13
Inman	7S2	7800	2/14	0	0.0	0.0	0.5	0.9	10
Rose Canyon 3/	10T2	7300	Report Delayed			0.0	2.3	1.2	10
Mogollon	8S2	7000	2/14	2	0.8	0.0	3.6	---	5
Black Canyon 3/	7S3	6790	Report Delayed			---	0.0	---	4
SALT RIVER									
Ft. Apache 1/ 3/	9R5	9160	2/12	22	4.5	4.5	---	---	7
Baldy 1/ 3/	9S1	9125	2/12	22	4.7	4.6	---	---	7
Maverick Fork 3/	9S2	9020	2/12	28	6.0	7.7	---	---	7
Nutrioso	9S4	8500	2/13	3	0.6	0.0	3.0	2.5	18
Coronado Trail	9S7	8000	2/13	4	0.8	0.0	3.9	3.9	18
Beaver Head	9S6	8000	2/13	T	T	0.0	4.5	3.1	17
Pacheta	9S5	7800	2/15	7	2.0	0.0	6.0	---	7
Gentry 3/	10R5	7600	2/13	T	T	2.8	---	---	7
Heber 3/	10R4	7600	2/13	T	T	4.2	---	---	7
Canyon Creek #2 3/	10R7	7500	2/13	T	T	---	---	---	0
McNary	9R2	7200	2/14	5	1.7	0.0	5.5	2.6	18
Milk Ranch	9R1	7000	2/14	T	T	0.0	4.3	1.4	17
Workman Creek 3/	10S1	6900	Report Delayed			0.8	3.8	---	6
Forest Dale	10R6	6430	2/14	0	0.0	0.0	3.7	1.0	18
VERDE RIVER									
Happy Jack 3/	11R5	7630	2/13	6	1.3	2.2	---	---	5
Gaddes Canyon 3/	12R4	7600	2/14	10	2.3	3.5	3.3	---	4
Mormon Mountain 3/	11R3	7500	2/14	6	1.7	6.9	---	---	7
Mormon Lake 1/ 3/	11R4	7350	2/14	T	T	5.1	---	6.6	10
Fort Valley 1/3/	11P2	7350	Report Delayed			0.2	1.1	3.4	11
Mingus Mountain	12R3	7100	2/14	0	0.0	T	T	2.0	11
Chalender	12P1	7100	2/13	3	0.9	1.8	0.7	3.9	11
Casner Park 3/	11R2	6930	2/14	T	T	5.0	---	---	7
Munds Park 3/	11R1	6500	2/14	T	T	3.1	---	---	7
Iron Springs 1/	12R2	6200	2/11	0	0.0	1.9	T	1.8	12
Camp Wood	12R1	5700	2/14	0	0.0	0.0	0.0	1.3	12

1/ On adjacent drainage.

2/ 1938-52 averages are estimated from existing records within period.

3/ Not included in watershed averages.

ARIZONA SNOW SURVEYS - ABOUT FEBRUARY 15, 1958

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENTS 1958 Date of Survey	Snow Depth (In.)	Water Content (In.)	PAST RECORD Water Content (In.) 1957	1956	1938-52 Average 2/	Prior Yrs. of Record
WILLIAMS RIVER									
Iron Springs	12R2	6200	2/11	0	0.0	1.9	T	1.8	12
Camp Wood 1/	12R1	5700	2/14	0	0.0	0.0	0.0	1.3	12
Willow Ranch	13P1	5000	2/14	0	0.0	0.0	0.0	0.8	10
LOWER COLORADO RIVER									
Bright Angel 3/	12N1	8400	No Survey			11.6	6.4	9.1	11
Grand Canyon	11P1	7500	2/14	8	2.0	2.6	1.6	3.2	10
Fort Valley 3/	11P2	7350	Report Delayed			0.2	1.1	3.4	11
Chalender 1/	12P1	7100	2/13	3	0.9	1.8	0.7	3.9	11
LITTLE COLORADO RIVER									
Ft. Apache 3/	9R5	9160	2/12	22	4.5	4.5	---	---	7
Baldy 3/	9S1	9125	2/12	22	4.7	4.6	---	---	7
Nutrioso	9S4	8500	2/13	3	0.6	0.0	3.0	2.5	18
Happy Jack 1/3/	11R5	7630	2/13	6	1.3	2.2	---	---	5
Gentry 3/	10R5	7600	2/13	T	T	2.8	---	---	7
Heber 3/	10R4	7600	2/13	T	T	4.2	---	---	7
Canyon Creek #2 3/	10R7	7500	2/13	T	T	---	---	---	0
Mormon Mountain 3/	11R3	7500	2/14	6	1.7	6.9	---	---	7
Mormon Lake 3/	11R4	7350	2/14	T	T	5.1	---	6.6	10
Fort Valley 3/	11P2	7350	Report Delayed			0.2	1.1	3.4	11
McNary	9R2	7200	2/14	5	1.7	0.0	5.5	2.6	18
Forest Dale	10R6	6430	2/14	0	0.0	0.0	3.7	1.0	18

1/ On adjacent drainage.

2/ 1938-52 averages are estimated from existing records within period.

3/ Not included in watershed averages.

ARIZONA SNOW SURVEYS - DELAYED REPORTS RECEIVED SINCE LAST BULLETIN (February 1, 1958)

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENTS - 1958 Date of Survey	Snow Depth (Inches)	Water Content (Inches)
GILA RIVER					
Bear Wallow	10T1	8100	1/31	T	T
Rose Canyon	10T2	7300	1/31	0.0	0.0
WILLIAMS RIVER					
Camp Wood	12R1	5700	2/1	0.0	0.0
Willow Ranch	13P1	5000	"	0.0	0.0

PRECIPITATION AT SELECTED ARIZONA STATIONS [1]

STATION	Precipitation (Inches)			
	January - 1958		Current Water-Year (Oct. 1957 - Jan. 1958	
	Total	Departure from long term mean	Total	Departure from long term mean
Ash Fork	0.18	- 0.82	3.23	- 0.33
Clifton	0.60	- 0.29	3.75	+ 0.58
Douglas Smelter	T	- 0.69	1.90	- 0.57
Flagstaff WBAS [2]	0.22	- 1.47	8.71	+ 2.81
Grand Canyon Hq.	0.60	- 0.78	7.98	+ 3.48
Parker	0.09	- 0.48	1.37	- 0.34
Payson Ranger Station	0.14	- 1.89	7.49	+ 0.97
Phoenix WBAS [2]	0.07	- 0.53	2.98	+ 0.54
Prescott WBAS [2]	0.23	- 0.87	3.00	- 0.77
Springerville	0.60	- 0.12	2.38	+ 0.08
Tucson WBAS [2]	T	- 0.63	4.07	+ 1.27
Winslow WBAS [2]	0.04	- 0.33	2.76	+ 0.88
Yuma WBAS [2]	T	- 0.33	2.73	+ 1.39

1/ Data and Analysis furnished by Paul C. Kangieser, Arizona State Climatologist, U. S. Weather Bureau, Phoenix, Arizona.

2/ WBAS = Weather Bureau Airport Station

LIST OF SNOW SURVEYORS

SNOW COURSE	SURVEYOR
Baldy	SCS and SRVWUA
Bear Wallow	Forest Service - A. L. Foster
Beaver Head	N. A. Josh
Black Canyon	Wayne Black
Bright Angel	National Park Service
Camp Wood	Mrs. C. C. Merritt
Canyon Creek	SCS and SRVWUA
Casner Park	SCS and SRVWUA
Chalender	Forest Service - M. C. Oleson & F. E. Page
Coronado Trail	Forest Service - Bill Brainard
Forest Dale	Fort Apache Reservation -- Valverde & Endfield
Frisco Divide	Forest Service - Frank Carroll
Ft. Apache	SCS and SRVWUA
Fort Valley	Rocky Mt. Forest & Range Experiment Station
Gaddes Canyon	SCS - Richard Enz
Gentry	SCS and SRVWUA
Grand Canyon	National Park Service - J. Lynch
Happy Jack	Emil Ryberg
Heber	SCS and SRVWUA
Inman	C. H. McCauley
Iron Springs	Ernest Saxby
McNary	Fort Apache Reservation - Valverde & Endfield
Maverick Fork	SCS and SRVWUA
Milk Ranch	Fort Apache Reservation - Valverde & Endfield
Mingus Mountain	SCS - Richard Enz
Mogollon	J. R. Wray
Mormon Lake	SCS and SRVWUA
Mormon Mountain	SCS and SRVWUA
Munds Park	SCS and SRVWUA
Nutrioso	Forest Service - Bill Brainard
Pacheta	Foch Phillips
Rose Canyon	Forest Service - A. L. Foster
State Line	Forest Service - Frank Carroll
Taylor Creek	C. H. McCauley
Willow Ranch	Tiny Miller
Workman Creek	Rocky Mt. Forest & Range Experiment Station

The following organizations cooperative in the Arizona snow survey work:

FEDERAL

Department of Agriculture

Soil Conservation Service

Forest Service
- Apache Forest
- Coconino Forest
- Coronado Forest
- Gila Forest
- Kaibab Forest
- Prescott Forest
- Rocky Mountain Forest and Range Experiment Station

Department of Commerce

Weather Bureau
- Arizona Section

Department of Interior

Bureau of Reclamation
- Region III

Geological Survey
- Arizona District

Bureau of Indian Affairs
- Fort Apache Reservation

National Park Service
- Grand Canyon National Park

Gila Water Commissioner
- Safford, Arizona

IRRIGATION PROJECTS

Salt River Valley Water Users' Association
- Phoenix, Arizona

San Carlos Irrigation and Drainage District
- Coolidge, Arizona

PRIVATE

Southwest Lumber Mills, Inc.
- McNary, Arizona

Other Organizations and Individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

Federal - State - Private

COOPERATIVE SNOW SURVEYS

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"